



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|---|-------------|----------------------|---------------------|------------------|
| 10/554,081 | 10/21/2005 | Wenhao Wang | KINW-01 | 4483 |
| 26875 7590 12/12/2008 WOOD, HERRON & EVANS, LLP 2700 CAREW TOWER 441 VINE STREET CINCINNATI, OH 45202 | | | | |
| EXAMINER | | | | |
| PO, MING CHEUNG | | | | |
| ART UNIT | | PAPER NUMBER | | |
| 1797 | | | | |
| MAIL DATE | | DELIVERY MODE | | |
| 12/12/2008 | | PAPER | | |

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

10/554,081

Applicant(s)

WANG, WENHAO

Examiner

MING CHEUNG PO

Art Unit

1797

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 21 October 2005.
2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-12 is/are pending in the application.
4a) Of the above claim(s) _____ is/are withdrawn from consideration.
5) ☐ Claim(s) _____ is/are allowed.
6) ☒ Claim(s) 1-12 is/are rejected.
7) ☐ Claim(s) _____ is/are objected to.
8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
10) ☒ The drawing(s) filed on 21 October 2005 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-85/86)
Paper No(s)/Mail Date 10/21/2005, 06/12/2006, 03/06/2008
4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date _____
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____

DETAILED ACTION

Office Summary

1. This is the initial office action based on application 10/554081 filed on 10/21/2005.
2. Claims 1-12 are pending and have been fully considered.

Specification

3. The disclosure is objected to because of the following informalities: applicant cites China Patent ZL89213344 on page 1 and page 6 as disclosing a magnetized fuel saver. China Patent ZL89213344 discloses a tire. The PCT application cites CHINA Patent ZL89213334 as disclosing a magnetized fuel saver.

Appropriate correction is required.

Drawings

4. New corrected drawings in compliance with 37 CFR 1.121(d) are required in this application because it is not possible to see where the circles, triangles and squares are from the range 0.05 to 0.12nm⁻¹ in Figure 3. Applicant is advised to employ the services of a competent patent draftsman outside the Office, as the U.S. Patent and Trademark Office no longer prepares new drawings. The corrected drawings are required in reply to the Office action to avoid abandonment of the application. The requirement for corrected drawings will not be held in abeyance.

Claim Rejections - 35 USC § 101

5. Claims 9-12 rejected under 35 U.S.C. 101 because the claimed invention is not supported by either a specific and substantial asserted utility or a well established utility.

Applicant teaches on pages 8 and 9 of the specification that an untreated fuel oil sample was measured with SANS technology. However, applicant states that the neutron scattering instrument could not provide specific information about the composition of the clusters. Applicant states that the curve shape of the results does not provide the size of the molecule clusters in paragraph 5 on page 8 and does not provide specific information about the composition of the clusters in paragraph 2 of page 9. It is unclear as to whether the fuel particles were clusters or if there were other impurities that caused the presence of D1 circles in Figure 3.

Claims 9-12 are also rejected under 35 U.S.C. 112, first paragraph. Specifically, since the claimed invention is not supported by either a specific and substantial asserted utility or a well established utility for the reasons set forth above, one skilled in the art clearly would not know how to use the claimed invention.

Claim Rejections - 35 USC § 103

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

7. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the

invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

8. Claims 1-12 are rejected under 35 U.S.C. 103(a) as being unpatentable over WENHAO (CN ZL94113646.9) in view of DOLAN (U.S. 5,985,153).

The present application teaches that WENHAO teaches a dual cavity magnetized fuel saver with three cylindrical magnets. **Two magnets with N poles facing each other with a gap of 0.5 – 2.0.** The magnets used may be made of NF30H material and its intrinsic coersivity is **18000-20000 Oersted** with the N pole face magnetic field intensity of 4,000-5,200 Gauss. One magnet is placed inside of the magnetic filter cavity.

WENHAO does not appear to explicitly teach a magnetic field gradient of at least 1.5 tesla/cm in a direction intersecting with the magnetic force lines of a magnetic field intensity of at least 8000 Gauss.

However, DOLAN teaches an apparatus for separating, immobilizing, and quantifying biological substances by employing a high internal gradient magnetic capture structure.

The two invention are analogous art because they are both concerned with the use of magnetic fields to separate particles in a liquid medium.

DOLAN teaches in lines 49 – 50 of column 1 that internal high gradient magnetic separators have been employed for 50 years and in lines 60 – 61 that gradients as high as **200 kGauss/cm** are easily achieved.

It would be obvious to one of ordinary skill in the art to apply the magnetic field gradient that DOLAN in the magnetic filter cavity that WENHAO teaches

The motivation to do so can be found in lines 50-51 of column 1 of DOLAN, which teaches that an internal magnetic field may remove weakly magnetic materials from slurries,

WENHAO still does not teach a magnetic field intensity of 8,000 Gauss.

However, it would be obvious to one of ordinary skill in the art to use at least a magnetic field intensity of at least 8,000 Gauss.

The motivation to do so is a reasonable expectation of success by increasing the magnitude of the magnetic field.

Therefore, the invention as a whole would have been *prima facie* obvious to one of ordinary skill in the art at the time the invention was made.

Regarding claims 1-8, WENHAO does not seem to explicitly state the size of the gasoline particles in the dual-cavity magnetized fuel saver.

However, the same process should yield the same product.

There is no reason to believe that the fuel saver that modified WENHAO teaches can not produce a fuel oil that contains substantially no granules greater than 3 nm or that the fuel oil is gasoline, diesel oil, kerosene, heavy oil, or bio-diesel.

Therefore, the invention as a whole would have been *prima facie* obvious to one of ordinary skill in the art at the time the invention was made.

Conclusion

9. Any inquiry concerning this communication or earlier communications from the examiner should be directed to MING CHEUNG PO whose telephone number is (571)270-5552. The examiner can normally be reached on 9:00 - 4:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Glenn Caldarola can be reached on (571)272-1444. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Ellen M McAvoy/

Primary Examiner, Art Unit 1797

Ming Cheung Po
Patent Examiner
Art Unit:1797

Application/Control Number: 10/554,081
Art Unit: 1797

Page 7